

(12) United States Patent Hattori et al.

(10) Patent No.:

US 6,445,669 B1

(45) Date of Patent:

Sep. 3, 2002

(54) INITIALIZATION OF PHASE-CHANGE OPTICAL RECORDING MEDIUM

(75) Inventors: Kyohji Hattori, Ebina; Fumiya Ohmi,
Sagamihara; Kenichi Aihara, Machida;
Katsuyuki Yamada, Mishima; Yuki
Nakamura, Yokohama; Eiji Noda,
Kawasaki; Michihisa Takahashi,
Atsugi; Yujiro Kaneko, Machida;
Yukio Ide, Mishima, all of (JP)

(73) Assignee: Ricoh Company, Ltd., Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/471,345

(22) Filed: Dec. 23, 1999

(51) Int. Cl. G11B 7/00 (52) U.S. Cl. 369/116; 369/121; 369/13.03 (58) Field of Search 369/116, 121,

(56) References Cited

U.S. PATENT	DOCUMENTS
-------------	-----------

5,784,353 A	*	7/1998	Matsui	369/102
5,784,355 A	•	7/1998	Abe	369/59.12

5,875,160 A	٠	2/1999	Harigaya et al 369/116
6,256,286 B1	٠	7/2001	Ogawa 369/116
6,278,674 B1	•	8/2001	Araki et al 369/116

FOREIGN PATENT DOCUMENTS

EP	848379 A2	6/1998
EP	848379 A3	8/2000
JP	2-42661	2/1990
JP	4-34725	2/1992
JP	4113519	4/1992
JP	9320120	12/1997
JP	10-27344	1/1998
JP	10112065	4/1998
JP	10208310 A	 8/1998
JP	10312582	11/1998

^{*} cited by examiner

Primary Examiner—Thang V. Tran (74) Attorney, Agent, or Firm—Cooper & Dunham LLP

57) ABSTRACT

A method of initializing a phase-change optical information recording medium is provided, using an optical system incorporating a semiconductor laser device. The laser device is characterized by a specified spatial power distribution. In a spatial distribution of the laser power focused on the recording medium, in the direction perpendicular to guide tracks the laser device preferably has less average smaller in both end regions of the spatial distribution, which have each 10% of the width at half maximum of the distribution, than the average in the center region of the full width at half maximum of the distribution.

13 Claims, 7 Drawing Sheets



